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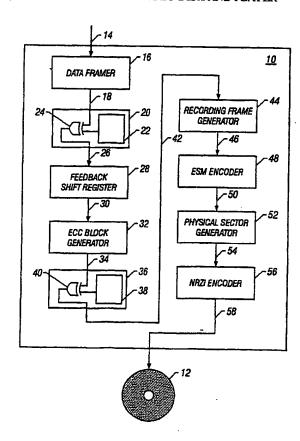
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(54) Title: SECURE DIGITAL VIDEO DISK AND PLAYER



(57) Abstract: A method for recording data on an optical medium is disclosed. In one embodiment, the method includes receiving main data from a data source, determining a plurality of data frame values in response to the main data, inverting at least one selected bit in at least one of the data frame values to generate a plurality of encoded data frames, scrambling the encoded data frames by a feedback shift register to generate scrambled data frames, generating ECC values in response to the scrambled data frames, adding the ECC values to the scrambled data frames to generate an ECC block, rearranging the ECC block to generate a plurality of recording frames, encoding the recording frames by an eight-to-sixteen modulation (ESM) encoder to generate code words, adding sync values to the code words to generate a plurality of physical sectors, and recording the physical sectors on the optical medium. A complementary method for reading and decoding data from an optical medium is also disclosed. These complementary encoding and decoding schemes provide a method for creating and reading proprietary format DVDs which may not be read or copied by conventional DVD players. These encoding and decoding schemes result from relatively minor modifications to existing DVD standards, allowing many standard system components to be used and thereby making the encoding/decoding system relatively easy and inexpensive to implement.

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PCT/US 01/17870 A. CLASSIFICATION OF SUBJECT MATTER IPC 7 G11B20/10 G11B G11B20/00 According to International Patent Classification (IPC) or to both national classification and IPC B. FIELDS SEARCHED Minimum documentation searched (classification system followed by classification symbols) IPC 7 G11B H04N Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched Electronic data base consulted during the international search (name of data base and, where practical, search terms used) EPO-Internal, WPI Data, PAJ C. DOCUMENTS CONSIDERED TO BE RELEVANT Category ° Citation of document, with indication, where appropriate, of the relevant passages Relevant to claim No. X EP 0 794 496 A (SONY CORP) 1,2,4-7,10 September 1997 (1997-09-10) 9,11, 13-15 abstract figures 1,25,26,28,29 column 4, line 59 -column 5, line 12 column 11, line 4 - line 9 column 17, line 47 -column 18, line 18 column 21, line 38 - line 45 Y 8,10 Α 3,12 Further documents are listed in the continuation of box C. Patent family members are listed in annex. Special categories of cited documents; *T* later document published after the international filing date or priority date and not in conflict with the application but *A* document defining the general state of the an which is not considered to be of particular relevance cited to understand the principle or theory underlying the 'E' eartier document but published on or after the international *X* document of particular relevance: the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone filing date *L* document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified) "Y" document of particular relevance: the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such docu-ments, such combination being obvious to a person skilled in the art. *O* document referring to an oral disclosure, use, exhibition or document published prior to the international filing date but later than the priority date claimed "&" document member of the same patent family Date of the actual completion of the international search Date of mailing of the international search report 8 January 2002 22/01/2002 Name and mailing address of the ISA Authorized officer European Patent Office, P.B. 5618 Patentiaan 2 NL - 2280 HV Riswijk Tel. (+31-70) 340-2040, Tx. 31 651 epo ni, Fax: (+31-70) 340-3016

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